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CMCC Doc. No. 151x5.1280
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10 November 1958

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[redacted]

Dear Dan:

Attached is Field Engineering Progress Report No. 1 (CMCC Doc. No. 163x5.91). This report covers the field engineering services furnished under Contract A-101 for the period of 1 July 1958 through 30 September 1958. We are sending you three (3) copies of this report in the event you would like Sid, Commo, or others to review the activities it covers.

Sincerely,

Jack

Enclosures:
CMCC Doc. No. 163x5.91 (3 copies)

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PROGRESS REPORT NO. 1

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FIELD ENGINEERING SERVICES FOR

CONTRACT NO. A-101

1 July 1958 to 30 September 1958

CMCC Document No. 163X5.91
Copy 1 of 10 Copies

20 October 1958

(This document contains a total of 12 sheets,
including this title sheet.)

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TABLE OF CONTENTS

1. General

a. This report describes the in-plant field engineering activities in support of Contract A-101, Requirements 1 and 3, and covers the period from 1 July through 30 September 1958. The next progress report will contain a resume of man hours expended. The activities described in this report are divided into four general categories: supervision, training, field modifications, and general field support.

b. Supervisory activities during the report period included liaison trips to Headquarters, detachments B and C, and Laughlin Air Force Base (Customer C); briefing and orientation of customer representatives with respect to this contractor's equipment and activities; and expansion and reorganization of the in-plant field support program. Training activities included a series of lectures for engineers and technicians in training, and preparation of the first group of training aids for Requirement 3. Field modifications processed during the report period included service bulletins and modification kits for Systems 1, 3 and 4. General field support activities included technical services and consultation for technical representatives in the field, answers to Unsatisfactory Reports, and environmental testing on System 4, Serial 105.

2. Supervisory Activities

a. Administrative

(1) During the report period, a revised organizational structure was established within the Field Engineering Department. Its main purpose was to define and assign definite responsibilities in the areas of training, technical services to the field, and field modifications and related activities. It is our belief that these changes will result in improved efficiency and quality of service under the field engineering contract.

(2) Technical personnel hired by the Field Engineering Department during the report period include one MTS and one technician for assignment to Laughlin AFB. In addition, personnel associated with the spares program were transferred to the field engineering organization. The spares program is currently undergoing re-evaluation to improve service to the customer.

b. Orientation and Technical Briefings

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During the report period, the following customer representatives visited the factory:

[redacted]

c. Liaison Trips

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(1) During the period 20 June through 23 July 1958, [redacted] made liaison trips to Project Headquarters,

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Washington, D.C., and to Detachments B and C [redacted] The initial purpose of these trips was to establish factory liaison with Detachment C and to discuss technical and administrative details pertaining to this contractor's field support activities during the current fiscal year. The trip to Detachment B was added to the itinerary at the request of the Director of Operations, to make an appraisal of the equipment and logistic support and submit a report which would allow Headquarters to estimate the probable success of a proposed System 4 staging operation. A detailed report on [redacted] visits to Detachments B and C was submitted to Headquarters, Attention: Commo, on 13 August 1958 (CMCC 151X5.1206).

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(2) During the period 16 through 19 September 1958, [redacted] visited the 4028th Squadron, Laughlin AFB, to maintain factory liaison with contractor representatives and with squadron officers. The requirements for field engineering personnel were reviewed and it was determined that a technician can be substituted in place of an engineer previously scheduled for instructor duties at Del Rio. Also, if delivery and installation schedules are favorable at the four overseas data-reduction centers, there is a possibility that another engineer-instructor can be dropped from the requirement. A detailed report of [redacted] visit to Del Rio is given in a letter to [redacted] dated 14 October 1958 (CMCC 151X5.1244).

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3. Training

a. In-Plant Training Program

(1) During the report period, three field engineers completed their in-plant training and reported for duty at Laughlin AFB. At the close of the report interval, one field engineer and one technician were in training at the factory. They will be assigned to Del Rio during the next report period.

(2) The in-plant training program is highly flexible and is adjusted to suit the needs of each individual. In general, the program proceeds as follows: First, the technical background and education of the individual are evaluated and a list of suggested self-study materials is compiled. These materials consist of reference and text books, unclassified instruction manuals, and technical articles. The student then proceeds with his studies under the guidance of an instructor. Alternating with the self-study phase, a series of lectures is presented by members of the technical staff, covering special circuits and technical concepts pertinent to the systems on which the student will eventually be working. The lectures are of an unclassified nature until such time as the proper security clearance is received. When the individual has received his clearance, he is given an orientation lecture on the Elint systems and their use. Finally, the engineer or technician in training is given an opportunity to work on the equipment through participation in test programs, equipment modifications, and related activities.

b. Training Aids

A training-aids package for the Data-Reduction System is currently in preparation. The package when completed will consist of a set of large "wall-size" simplified

schematic diagrams, a series of pamphlets covering basic types of circuits found in the system (e.g., Principles of Tape Recording), and a suggested course outline for use by instructors. The wall-chart schematics will be suitable for full-scale reproduction and will also be reduced to page size for inclusion in students' notebooks and instruction manuals. The training aids are intended primarily for use in training technical personnel for Customer C Data-Reduction Centers in the U. S. and overseas. Additional costs for distribution of training aids to all ten Customer C Data-Reduction Centers is included in the proposal for the period 1 July to 31 December 1958, but approval has not yet been received.

4. Field Modifications

a. General

The decision was made recently to revise the numbering system for Field Service Bulletins. The bulletins will be numbered serially according to system, as before, but will carry an identifying prefix. For example, Field Service Bulletin Number 4 for System 1 will be numbered 1-4; Field Service Bulletin Number 1 for the Playback Equipment (A-rack) will be numbered A-1. As a further aid to the keeping of records, a "catalog" will be published at regular intervals listing all bulletins that have been issued against each system or equipment.

b. System 1 (Customer A)

Field Service Bulletin 1-4 for System 1 has been completed and will be distributed shortly. This bulletin and its modification kit provide a locking assembly for connectors P702 and J702 on the B-unit. Additional modifications for System 1 currently in work include modification of [redacted] to fit all aircraft configurations, and modification of the recorder to provide interchangeability with System 6 recorders.

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c. System 1 (Customer C)

The Field Service Bulletins described above for Customer A are also to be supplied for Customer C installations except for the last item involving System 6 interchangeability.

d. S-603 Dual Channel Amplifier (Customer A)

Modification of the traveling-wave tube amplifier to prevent high-voltage arc-over at high altitudes is nearing completion and a service bulletin will be published during the next report period.

e. System 3 (Customer A)

Field Service Bulletin 3-1 for System 3 covers the same modification as Bulletin 1-4 for System 1 and will be

distributed at the same time. Items pending include modification of the System 3 recorders to provide System 6 interchangeability, and elimination of the System 3 interference with the ARN-6 radio compass.

f. System 3 (Customer C)

The Field Service Bulletins described above for Customer A apply also to Customer C installations, except for the modification to provide System 6 interchangeability. Funding for engineering work on problems such as the ARN-6 interference was included in the proposal for Field Engineering Services, but formal approval has not yet been received.

g. System 4 (Customers A and C)

During the report interval, the following Field Service Bulletins and modification kits were completed:

Field Service Bulletin No.	Unit	Description
1*	Camera and cockpit fan motors	Installation of noise filters to prevent receiver interference*
2	Test set	Change high-voltage meter scale
3	Power supply	Substitution of 1N1131 diode for 1N591
4	Power supply	Fuse replacement for improved reliability
5	Power supply	Add regulation to +55 volts dc supply

*Field Service Bulletin No. 1 was issued on a trial basis, and time for adequate testing was not available. This modification has since proved unsatisfactory.

Field Service Bulletin No.	Unit	Description
6	Programmer (Serial 104 only)	Improve circuit stability and provide compatibility between units in field (Customer C only)
7	Indicator (Serial 104 only)	Improve circuit reliability and preserve compatibility (Customer C only)
8	Indicator (Serial 103 only)	Improve performance and preserve compatibility (Customer A only)
9	Programmer (Serial 103 only)	Improve performance and preserve compatibility (Customer A only)

Of the above items, Numbers 3, 8 and 9 have been shipped and the remainder will be shipped as soon as assembly and packaging of modification kits is completed. (Field Service Bulletin Number 5 required a proposal, which has been submitted for approval.) A service bulletin covering installation and operation of the 800-foot film magazine for System 4 will be completed during the next report period.

h. System 6 (Customer A)

Field Service Bulletin 6-2 was completed and will be distributed shortly. This bulletin covers the same modification as FSB 1-4 for System 1 and 3-1 for System 3.

i. Data-Reduction System (Customers A and C)

Field Service Bulletin Number 1 for the 14-Channel Playback Equipment (G-rack) was issued during the report period. This bulletin covers rewiring of a number of output signal connectors to correct an error. No modification kit is required.

5. General Field Support

a. Technical Services

(1) Activities in this area include the research and investigation involved in answering queries and solving special problems encountered in the field; procurement and shipment of special parts not available to field representatives through normal channels; and processing and analysis of fault reports. These activities are handled on a day-to-day basis and a detailed description is beyond the scope of this report. (It should be noted that Customer C funding for this type of work has not yet been approved.)

(2) A project currently in work is the first of a series of Technical Information Bulletins. This bulletin will contain service hints, special maintenance notes, suggestions for classroom and on-the-job training, and data of a similar nature. It is hoped that these bulletins can be published on a monthly basis.

(3) A second project, now nearing completion, is a list of common electronic parts and hardware to be supplied by Customer A to overseas field detachments. This bench stock list is designed to increase the efficiency of normal maintenance and service, to permit the field engineer to perform on-the-spot research and development when required, and to aid in the repair of auxiliary equipment and construction of special test devices as the need arises.

b. Unsatisfactory Reports

The following URs from Customer C were answered during the report interval:

UR 58-188
UR 58-694

Both of these items concerned failure of the System 1/ System 3 information recorder. The URs are corrected

by Field Service Bulletins 1-4, 3-1 and 6-2 which provide locking assemblies for connectors P702 and J702 on the recorder. All outstanding URs will be answered during the next report period.

c. System 4 Environmental and Flight Tests (Customer C)

Environmental tests on Serial 105 were completed on 28 September. Rework of some units is in progress and flight tests of the system will begin on or about 13 October. A detailed report of the environmental test results is in preparation.